(54) Title: A METHOD AND A SYSTEM FOR PROVIDING INTELLIGENT SERVICES
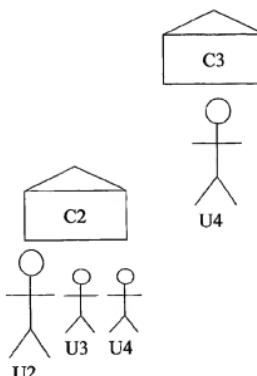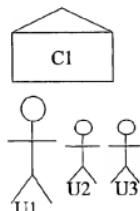
(57) Abstract: The present invention relates to a method and a system for providing users with access to services. The services are provided via an access provider. A client structure, associated with the access provider, includes a number of associated services made available by the access provider. Each client structure has at least one assigned user. A first user in a first client structure is provided with the ability to give a second user assigned to a second client structure authority to access said first client structure.

WO 01/76294 A1

A METHOD AND A SYSTEM FOR PROVIDING INTELLIGENT SERVICES

Technical field of the Invention

The present invention relates to a method and a
system for providing intelligent services, in particular
5 for providing users with access to such services.

Background art

In today's society there is a great flow of
information. New technologies make the flow faster and
10 faster. An example of large information quantity is the
Internet, where not only readable information is
available, but also information in the form of different
types of services.

It is becoming more and more important for the
15 different services (including information) to be easily
accessible. For instance, in large companies with many
employees it is of great relevance for certain persons to
have some sort of access to certain services. Some
persons may not need to use more than a part of a
20 specific service, while others may need to have full
access to all features included in the specific service.

There are of course many examples where the access
of services are of importance. An example is different
companies interchanging services, another one is on a
25 private level when a parent wants the children to have
access to certain services accessible by the parent.

Even though there are many different systems which
are meant to facilitate the access to services, they are
not fully satisfactory, and not flexible enough.

30 Also, the great number of different systems often
have different respective types of login procedures for
accessing services provided via the systems. Thus, a
person wishing to access services in several systems
must learn and remember the various login procedures.

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The concept of "intelligent homes" has increasingly become a field of great interest and growing attention. There is an abundance of different applications, such as for instance controlling or monitoring electrical
5   appliances, heating, etc. However, there still remains some problems, for instance related to the people living in the house currently not having access possibilities. People still tend to be dependent of friends or neighbours, to whom e.g. keys are lent for allowing them
10 to enter the house.

Summary of the Invention

An object of the present invention is to achieve a method and a system of providing service access, which
15 method and system are more flexible than prior art solutions.

Another object of the invention is to make it easy for persons and companies to access relevant services.

Yet another object of the invention is to associate
20 users with various services provided from different respective providers.

These and other objects will become apparent in the following description.

According to one aspect of the present invention a
25 method is provided, in which users in client structures are provided with access to services. The services are provided via an access provider. A client structure, associated with the access provider, includes a number of associated services made available by the access
30 provider. Each client structure has at least one assigned user. A first user in a first client structure is provided with the ability to give a second user assigned to a second client structure authority to access said first client structure.
35   According to another aspect of the present invention a system is provided, in which system users are provided with access to services. The system includes a server

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providing an interface for enabling different users to
interact with the system; a service control module for
enabling different service providers to interact with the
system, said service control module, being operatively
5   connected to said server; said server including a
database with different client structures, each client
structure being associated with a client and including at
least one authority profile with which a user of the
client structure has the authority to give a second user
10   of a second client structure authority to access said
client structure.

Throughout this disclosure the following definitions
will apply:

An *access provider* provides a commercial
15   infrastructure for intelligent services.

A *service provider* provides intelligent services.

A *service* can be any type of information or object
which may be accessible or subject to manipulation, and
being provided by a service provider.

20   A *client* is a private person or a juridical person,
such as a company, that has arrived at an agreement, with
someone (a person or a company) that provides services or
makes services available (i.e. service and access
provider, respectively).

25   A *user* can be anyone or anything that can be given
the possibility to access certain services.

A *client structure* is associated with a number of
services made available for a client, and a number of
users having certain access to a subset of said services.

30   An *authority profile* defines the level of authority
with which certain services can be accessible by a user
associated to said authority profile.

The basis for the present invention is the insight
and the importance of placing a user in focus. This
35   insight of having a user as the centre of attraction,
demands a flexible system of available services.

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The present invention makes it possible for
different actors on the market to create a common world
for a user. The user will have one single entrance to
this common world, e.g. by means of a single login
5   procedure on a web page, where he will have access to all
for him available client structures and services.

Thus, the invention provides for a service platform
which e.g. can be accessed via the Internet and which
gives users access to different services provided by
10 different actors, such as service providers. In
particular, the invention provides for enabling access to
services initially associated to another group of users,
i.e. another client structure. The service platform is
created and operated by an access provider. The access
15 provider gives service providers, such as companies, the
possibility to interact with the service platform and to
offer services to clients registered with the access
provider. The services can be anything from Internet
services, such as weather forecasts, to node related
20 services such as controlling an electrical appliance at
home.

A client which is registered with the access
provider can be a large company, but it can also be a
single private person. For every client, the access
25 provider defines a respective client structure. In each
client structure there must be at least one user. The
user is thus the one who actually uses the provided
services, while the client is liable for the used
services. Naturally, a client and a user may be one and
30 the same person.

The client structures per se are preferably not
connected to each other in any way. They are completely
separate structures. However, one and the same user can
be associated with different client structures.
35   In one embodiment of the present invention, this
service platform provides users with a user interface,
such as graphical user interface, e.g. a web page or

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other computer related interface, or a telephone related
interface, by means of which different services and
client structures may be accessed. Thus, a user can e.g.
access a client structure by a simple login on a web page
5 of the access provider. After the login he will see what
services (e.g. Internet services and node services) he
may use, and also what other client structures he may
access. The user may proceed in a corresponding way over
a telephone, using e.g. DTMF tones.

10   According to another embodiment of the invention,
each client assigns at least one user having a highest
level of authority in the client's client structure. This
user, a superuser, is provided with the ability to give
other users authority to access said client structure and
15 a subset or all of the services associated thereto. The
other users may very well be users that are already
assigned to other client structures.

     A client structure comprises preferably at least two
levels of authority, one of said levels being the highest
20 level, which in practice would normally mean full
authority or full access to the services in said client
structure.

     A superuser is preferably able to define different
levels of authority for different services. The superuser
25 may even associate new services to a client structure,
and of course assigning new users, which may already have
been associated with other client structures. Suitably,
the superuser is provided with the additional ability of
giving a new user, i.e. a user not yet associated with
30 any client structure, authority to access the client
structure of said superuser. Preferably, a superuser also
has the option of removing users or services from the
client structure.

     Different levels of authority may have different
35 types of limitations, such as to what extent a service is
accessible, or in what way a service may be manipulated,
or at what time or place, etc. Some users, not being

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superusers, may even have the same rights as the
superusers for a certain subset of the available
services.

5   According to one embodiment of the invention, the
level of authority for the users in a client structure,
is defined by authority profiles. A user thus becomes a
superuser when being associated to the authority profile
that allows full access and manipulation of services,
including adding and/or removing services and/or users. A
10   superuser may also define different authority profiles
for different services. In some cases, it may be suitable
to have some authority profiles predefined by a system
configuration.

        One of many advantages of utilising authority
15   profiles is, that if you wish to change the authority for
a large group of users, you do not need to change that
authority for each and every one of them. The only thing
that has to be done is simply a redefinition of the
authority profile, to which the group of users is
20   associated, thereby changing the authority of the whole
group. It goes without saying that there may at some
instances exist a set of identical authority profiles in
a client structure, wherein different groups of users are
associated to a respective one of said set.

25   As previously mentioned, a client could be a private
person who has come to an agreement with the access
provider. Being a client he will have a client structure
registered with the access provider. Every client
structure needs at least one user assigned thereto. In
30   the case of a private person being the client, the person
himself would suitably be assigned as a superuser, i.e.
he would be associated with the top authority profile of
that structure.

        In case of a company being a client, it may be
35   suitable to assign one or several users with full
authority, depending on different factors, such as the
size and different locations of the company.

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The present invention provides a highly flexible
solution for making services readily accessible for
different parties. It also provides a countless number of
possible implementations, of which only a few will be
5   given by way of elucidative examples.

For instance, a private person may be a superuser in
his own client structure. He becomes an employee in a
company, and for carrying out certain tasks, he needs to
have access to pieces of information, e.g. reading some
10   reports. The company, also being a client, has its own
client structure. A superuser in this client structure
will then assign the new employee thereto, with access to
said piece of information. The level of authority will
e.g. include "reading, but not revising". When the same
15   private person is on holiday, far away from his house, he
would like someone to make sure that the lawn in the
garden is watered (but only if it is dry), by switching
on the sprinkling system. He then gives his neighbour
certain access to his client structure, namely to the
20   service associated with the control of the sprinkler
system. In this way the neighbour will in a dry period,
with almost no hassle at all, be able to water the other
person's garden. All he has to do is to access the client
structure of the other person, in which he has the
25   authority to switch on the sprinklers, and activate the
system.

A user can preferably access a client structure, to
which he is assigned, by means of a computer or a
telephone. In case of a computer, the user can visit on
30   the Internet a web site of the access provider. After a
login procedure, including stating some sort of personal
identification code, the user will come to a private
homepage. On this private homepage he will be able to see
what services are available and, preferably, which level
35   of authority he has to the different services. On the
private homepage, he will also have icons or references
to all the client structures in which he is an assigned

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user. Thus, by clicking on one of these references he enters a specific client structure, and will there be able to access a number of services.

If a user would like to have access to or order
5 other services which are not yet available in the client structures to which he is associated, he may suitably visit a web page of the access provider. On or via such a page or pages, the user will be able to select new services provided by different service providers. If the
10 user wishes to order a new service to a specific client structure to which he is assigned, he must, preferably, be associated with an authority profile in that structure that allows him to carry out the ordering procedure.

A server of the access provider preferably performs
15 the functions of a centre or interception point for communication. Suitably, the server comprises software for administration of the network that interconnects the services and client structures, and also software for the different services offered by the service providers.
20 Thus, when a user in a client structure wishes to use or order a certain service and therefore sends a signal from his homepage to the access provider server, it will be forwarded from said server to the specific service provider, so that said specific service provider for
25 example will know which client to invoice for the provided services.

If a client with a client structure that has many users, such as a company, would like to change some client data e.g. the address, all the different service
30 providers would need to be notified. Since the server of the access provider serves as a link between the client structures and the service providers, the client (or rather a user) will only have to inform the access provider. The access provider will in turn communicate
35 said information further to the different service providers. The service providers will now be aware of

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said changed client data of said client and associated
users.

In accordance with the present invention, it is
possible for users to be part of different client
5   structures, and be associated to new ones. Here follows
an illustrative example. In case a first user assigned to
a first client structure wishes to give a second user
assigned to a second structure authority to access said
first client structure, the first user can on his private
10 homepage register the second user. Suitably, the first
user types in, at an entry on his homepage, some kind of
user identification that identifies the second user. The
first user may then define which services the second user
will have access to, and to what extent. Now the next
15 time the second user logs in, via the access provider
site, on his homepage, he will have a new reference,
namely a reference to the first client structure and its
corresponding services. Obviously, it is possible to
associate more than one "second user" to a client
20 structure. Thus, it should be apparent that the present
invention provides excellent possibilities for different
users to access different client structures and therewith
associated services. There are basically infinite
opportunities of cross-linking users and client
25 structures, wherein the server of the access provider is
the "spider in the web".

According to one embodiment of the present
invention, a service can be related to a local gateway
node associated to a client structure. Such a local
30 gateway node is preferably in communication with locally
distributed nodes. The gateway node and the locally
distributed nodes can be installed at a location being
accessible over a communications network, such as for
instance in a building. Suitably, the locally distributed
35 nodes are operatively connected to appliances of
different types, for controlling, monitoring or data
collecting purposes. In an "intelligent house" the

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locally distributed nodes can be connected, for instance,
to the fridge for detecting opening and/or closing
thereof, or to the electricity meter for monitoring the
power consumption, or to a flat-iron for warning if it
5   has not been switched off, etc. Suitably, the locally
distributed nodes communicate information to the local
gateway node over the power mains (e.g. by means of the
LonWorks standard). The locally distributed nodes can
also via the local gateway node be used for controlling
10 some appliances. When a new locally distributed node is
installed, the local gateway node will sense this and
inform the access provider. The access provide will then
preferably present different services related to that new
node.

15   The server of the access provider can be provided
with program modules supporting the various locally
distributed nodes. The program modules are commonly
provided by the service providers. Thus, a user can from
his homepage (or a telephone) in the access provider
20 system, control different appliances.

        Thus, in accordance with one embodiment of the
invention, a person being at work at the company in which
he is employed, may currently be operating in the client
structure of the company. The person is thus a user with
25 a certain level of authority in said client structure.
Earlier in the morning he had the foresight of placing a
ration of packaged food in his microwave oven. Just
before leaving the office in the evening, he enters his
own client structure (in which he is a superuser) by
30 pointing and clicking on a reference on the page
associated with the company's client structure. Of all
the different services he has access to, one is e.g.
related to the control of his microwave oven. The access
provider server has been provided by the specific
35 microwave oven service provider with a program for
controlling microwave ovens. From the office computer,
the person will thus set his microwave oven to cook the

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food so that it will be ready and hot by the time he gets
home. As explained earlier, the communication goes via
the access provider server. Said server will use the
relevant program and send signals to a local gateway node
5   directly associated with the person's own client
structure. In this case, the signals will be sent to a
local gateway node located in the person's house.
Subsequently, the local gateway node will forward the
signal to the locally distributed node being either
10 integrated with or as a separate unit operatively
connected to the microwave oven. The microwave oven will
start cooking the food in accordance with the commands
sent by the person.

It should be noted that a local gateway node is
15 directly associated with a client and not with the users
in the client's client structure. Thus, a specific local
gateway node can preferably only be associated with one
unique client structure. The node services provided by
the service providers are related to the corresponding
20 locally distributed nodes, enabling users to control,
monitor etc. different appliances. In turn, the locally
distributed nodes have a connection with the local
gateway node which is associated with a specific
responsible client.

25   The service providers can naturally also provide
programs related to web or telephone services. An example
of such a service is for instance meteorological weather
forecast services provided by a weather bureau. A user
will readily be able to have the latest weather forecast
30 over the computer or the telephone. There are of course
many other examples of services, such as traffic
information, stock-exchange quotation, etc..

The programs provided by the service providers are
suitably software modules which the access provider,
35 preferably after inspection, will connect to a service
control module being operatively connected to the access
provider server.

Evidently, service providers can also be clients or users in the same way as any other person or company. A first service provider may have a client structure, with which services from a second service provider are associated. Some of the users of the client structure of said first service provider may even have access to the client structure of said second service provider. This can be practical in a group of companies.

Also, it is possible for a number of companies (clients) that have a respective client structure to constitute an organisational entity, wherein one of the client structures is a controlling client structure being superior to the others.

It should be clear from what has been stated above that the present invention provides a flexible service platform which puts the users in focus. According to the invention, users may interact with several client's client structures. A user of a first client structure may enter the system of the access provider and alter certain data, such as allowing another user from another client structure to have access to the first client structure and services associated therewith. Thus, this is an active action in real time. The user may also enter the system and modify which services that are to be accessible from his client structure. This is also an active action in real time.

Brief description of the drawings

The invention will now be described with reference to the accompanied drawings, in which:

Fig. 1 illustrates the inventive concept of the present invention;

Fig. 2 illustrates schematically a client structure of the present invention;

Fig. 3 illustrates schematically an infrastructure for the present invention;

Fig. 4a and Fig. 4b illustrate a graphical user interface for accessing different services and different client structures, in accordance with the present invention; and

5   Fig. 5 schematically illustrates a database structure.

Detailed description of preferred embodiments of the Invention

10   Fig. 1 illustrates the inventive concept of the present invention. Three clients are represented in the figure: a first client C1, a second client C2 and a third client C3. The different clients have one or more users assigned to their respective client structures. As can be

15 seen, the users are represented by stick figures, wherein the larger sized stick figures represent superusers having a highest level of authority and having the ability to associate users from other client structures.

Thus, the first client C1 has in its client

20 structure a first user U1, a second user U2 and a third user U3. The first user U1 is a superuser. The second client C2 has also three users, namely the second user U2, the third user U3, and additionally a fourth user U4. In this client structure, the second user U2 is assigned

25 to be superuser. Thus, a possible scenario may have been that the second user U2, also being superuser of the second client C2, needed access to the first client's C1 client structure. Therefore, the user U1 of the first client C1, gave the second user U2 authority of the first client C1, gave the second user U2 authority

30 to access the first client structure. Note, however, that in the first client's C1 client structure, the second user U2 is just an ordinary user. It can also be noted that the third user U3 is just an ordinary user (i.e. not a superuser) in both the first and the second client's

35 C1, C2 respective client structure.

Moving on to the third client C3, it can be observed that there is only one user, namely said fourth user U4,

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who is also the superuser in this client's C3 client
structure. This is the typical case of a private person
having his own client structure, while the previous ones
could illustrate two companies (or private persons giving
5 other people access). As mentioned previously, the fourth
user is also associated to the second client's C2 (e.g. a
company) client structure, but only as an ordinary user.

For reasons of clarity only three clients have been
illustrated and with a very limited number of users.
10 However, it should be obvious that many more users can be
associated to one and the same client structure, as well
as one and the same user can be associated to many more
client structures.

Fig. 2 illustrates schematically a client structure
15 10 of the present invention. For a client 12 of an access
provider a client structure 10 is registered with said
access provider. As can be seen in the figure, a client
structure 10 includes, besides the client 12, users 14,
services 16 and local gateway nodes 18. In the right side
20 of the figure a definition of the relationship between
"one" and "many" is illustrated, wherein a single
connection represents "one" and a branch-off with three
connections represents "many". Accordingly, the figure
shows that in a client structure 10 a single client 12
25 can have several associated users 14, several types of
services 16 and also several associated local gateway
nodes 18.

Essentially, the local gateway nodes 18 are also
associated to some type of service (cf. the microwave
30 oven case). It should be noted however that a local
gateway node 18 is a physical device in a certain
location, for communication with locally distributed
nodes that actuate, control or monitor different
appliances, whereas the other services 16 can incorporate
35 web related services, such as weather information. It
should also be appreciated that the local gateway node 18
is directly associated with the client 12 and not with

the users 14. The same applies to the other services 16.
Thus, for a user 14 being able to use a specific local
gateway node 18 or its connected locally distributed
nodes, he must be a user 14 in the client structure 10 to
5   which the local gateway node 18 is associated. Suitably,
he must also have a certain level of authority allowing
him to make use of the local gateway node 18.

        Fig. 3 illustrates schematically an infrastructure
for the present invention. The figure shows a server 20
10 of the access provider, a personal computer 22 and a
house 24 in which a local gateway node 26 is located. The
local gateway node 26 is connected for communication over
e.g. the power mains to three locally distributed nodes
28a, 28b and 28c, operatively connected to different
15 types of appliances (not shown). The server 20 of the
access provider has an integrated or otherwise
operatively connected service control module 30, which is
illustrated in the form of a comb, and said server 20
also includes a database 32 with different client
20 structures. The service control module 30 enables
different service providers to interact with the system
of the access provider. The service providers provide the
access provider with software modules which are connected
to the service control module 30. This is illustrated by
25 the squares 34a, 34b and 34c inserted in the comb.

        A user in a client structure may be able to access
services associated therewith by means of the personal
computer 22. He will also be able to access other client
structures to which he is assigned with respective
30 associated services. Preferably, in order to access the
client structures or the access provider system, the user
must follow a certain login procedure, in which he must
identify himself, e.g. with a password, PIN-code, or any
other suitable way. The computer 22 suitably communicates
35 over a data communications network, such as the Internet,
with the server 20 of the access provider. The database
32 associated with the server 20 includes information of

which services in said client structures are available
for said user, and with what level of authority. The
database 32 also points out how different users are
connected to the same or different client structures.
5   Thus, it only takes one login procedure to access or
order practically any available service.

The services are, as mentioned, provided by means of
software modules 34a, 34b and 34c, and can include web
services, such as weather information, or node related
10   services, such as control of a microwave oven. Suitably,
the access provider checks the programs provided as
software modules, before connecting them to the system.
At a received request form a user to access a certain
service, the server 20 of the access provider will,
15   preferably, by means of the corresponding software module
34a, 34b or 34c forward the request and obtain the
relevant service. The software modules 34a, 34b, 34c are
suitably developed by a respective service provider or
another party engaged by the service provider.

20   If e.g. a user wishes to change the room temperature
in his summer cottage or house 24, he may from any
computer 22 send the request to the server 20 of the
access provider. The server 20 will retrieve the relevant
program and in accordance therewith send command signals
25   to the local gateway node 26 located in the cottage or
house 24. The local gateway node 26 will, in turn,
communicate with a locally distributed node 28a, 28b or
28c connected to the temperature regulator of the cottage
or house 24.

30   Fig. 4a illustrates a graphical user interface for
accessing different services and different client
structures, in accordance with the present invention.
This schematic drawing illustrates a web site available
to a user after he has gone through a login procedure on
35   his computer. Many items may be visible on the web page,
however, for the sake of clarity, only services and
client structures are shown. In this case, there are

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eight different activated services S1...S8, represented by
circle references, available to the user in the current
client structure. Also, the user has access to three
client structures C1, C2 and C3, represented by square
5   references. Preferably, the reference or icon
representing the current client structure (C1 in this
case) is marked or highlighted.

By e.g. pointing the insertion pointer to a service
reference or icon, and clicking the mouse of the
10 computer, the user will access the desired service, as
explained previously. Likewise, if the user wishes to
enter another client structure to which he is associated,
he points and clicks on a client structure reference.

Fig. 4b illustrates what happens if the user selects
15 another client structure. A new picture comes up. The
three client structure references C1, C2 and C3 are still
the same as in Fig. 4a. This is quite natural, since the
user is still associated with these three client
structures, no more nor less, but now another reference
20 is marked or highlighted (C3). However, in this client
structure he has only access to five activated services
S3, S8, S9, S11 and S12. Of course, some of the services
(S3, S8) may be the same as in the first client
structure, other services (S9, S11, S12) may be
25 completely different.

Fig. 5 schematically shows an illustrative example
of how tables in a database structure may be designed.
The tables have been kept short and simple for the sake
of clarity. In this case, the database includes different
30 authority profiles, wherein various users and services
are associated to various authority profiles. Of course,
there are many ways to implement and realise databases of
an access provider, wherein it is to be understood that
the present Fig. 5 is merely shown by way of example.

35 Thus, six tables are shown. Table 1 relates to
clients including client identities and client names.
Table 2 relates to users including user identities and

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user names. Table 3 relates to services, both web or
telephone related informational services and node related
service, including service identities and service names.
Table 4 relates to authority profiles including profile
5   identities, profile names and client identities. Table 5
is a relational table including profile identities and
user identities. Tables 6 is a relational table including
profile identities and service identities.

In Table 1 three names are presented, a private
10 person named Smith, and two companies A and B. In Table 2
four different users are listed. In Table 3 six different
services are listed, wherein the first four are node
related services: temperature control and burglar alarm.
The two last services in the table are web related
15 services: stock-exchange update and traffic information.
In Table 4 the three first profiles have authority 1,
which suitably corresponds to superuser profile. As can
be seen in right column in Table 4, each of the listed
clients have a profile with authority 1. Furthermore,
20 Client-ID 3, i.e. Company B, has two more associated
authority profiles: authority 2 and authority 3.

Looking at Table 5, one can see that User-ID 1, i.e.
Smith, is associated to Profile-ID 1 and 3. That means,
looking at Table 4, that Smith is superuser in both his
25 own client structure "Smith" and in the client structure
of Company B. Having a glance at Table 6, one can observe
that with said Profile-ID 1 and 3 are associated Service-
ID 1 and 5, and, 4 and 6, respectively. Thus, in his own
client structure, Smith has a temperature control service
30 (Service-ID 1), such as the example with the summer
cottage. He also has a web service (Service-ID 5), with
which he gets stock-exchange information. In the client
structure of Company B, Smith has access to the burglar
alarm system (Service-ID 4), which is typically a node
35 related service. In that client structure, he also has
access to the traffic information service (Service-ID 6).

   In the same way, it is possible to look up to which
client structures other users are linked and to which
services they have access, and also their level of
authority.

5   Naturally this sort of tables may include other
information such as e.g. client and/or user address, and
other relevant data.

   It should be noted that numerous modifications and
variations can be made without departing from the scope

10 of the present invention defined in the accompanied
claims.

   Thus, it is to be understood that even though some
specific services have been pointed out, they are only
elucidative examples for the ease of understanding.

15 Obviously, many others are conceivable.

   Also, even if the previous description for the most
part has emphasised computer based communication, other
means are equally possible. For instance, a user can
communicate by means of a telephone which is capable of

20 transmitting DTMF-tones or by means of a cellular phone
WAP-interface, etc..

   Moreover, the database or databases of the access
provider can be designed in numerous ways depending on
different factors, such as relevant client, user and/or

25 service information, client structure components etc..
Thus, different alternatives are possible for
implementation in accordance with the purpose of the
invention.

30

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Claims

1. A method for providing users with access to services provided via an access provider, including the steps of:

registering, for a number of clients, a respective client structure with the access provider, each client structure including a corresponding set of services made available by the access provider;

assigning at least one user to each client structure; and

providing a first user assigned to a first client structure with the ability to give a second user assigned to a second client structure authority to access said first client structure.

2. The method as claimed in claim 1, wherein said first user is a superuser having a highest level of authority to said client structure and its corresponding set of services.

3. The method as claimed in claim 2, wherein said superuser gives said second user authority to access said first client structure with a certain level of authority, said first client structure being associated with at least two levels of authority.

4. The method as claimed in claim 2, wherein said superuser associates at least one second user with a specific authority profile, said profile defining a level of authority for accessing or manipulating a corresponding subset of services.

5. The method as claimed in claim 3 or 4, wherein different levels of authority are either predefined by a system configuration or defined by a superuser at an arbitrary time.

6. The method as claimed in any one of claims 2 - 5, wherein said superuser has the additional ability to give a user not yet associated to a client structure authority

5   to access said first client structure with a certain level of authority, said first client structure being associated with at least two levels of authority.

7. The method as claimed in any one of claims 3 - 6,
10 wherein said certain level of authority is the highest level of authority.

8. The method as claimed in any one of claims 1 - 7, wherein at least some of said services provided via said
15 access provider are defined by at least one external service provider.

9. The method as claimed in any one of claims 1 - 8, wherein at least some of said services provided via said
20 access provider are defined by said access provider.

10. The method as claimed in any one of claims 1 - 9, wherein a user is a physical person.

25   11. The method as claimed in any one of claims 1 - 9, wherein a user is a juridical person.

12. The method as claimed in any one of claims 1 - 11, wherein said set of services includes a number of
30 services provided via a local gateway node associated to a client structure, said local gateway node being arranged in communication with a number of locally distributed nodes.

35   13. The method as claimed in claim 12, wherein a locally distributed node which is operatively connected

to a local gateway node, is associated with the same
unique client structure as said local gateway node.

5   14. The method as claimed in any one of claims 12 -
13, wherein said local gateway node and said locally
distributed nodes are installed at a location being
accessible by said access provider over a communications
network.

10   15. The method as claimed in claim 14, wherein said
local gateway node and said locally distributed nodes are
installed in a building.

       16. The method as claimed in any one of claims 12 -
15   15, wherein said locally distributed nodes are
operatively connected to appliances of different types,
for controlling, monitoring or data collecting purposes.

       17. The method as claimed in any one of claims 1 -
20   16, including the step of associating each assigned user
with a user interface with which said client structure is
accessible.

       18. The method as claimed in claim 17, wherein said
25   user interface is a graphical user interface, such as a
web page.

       19. The method as claimed in claim 18, wherein the
user interface associated with said second user includes
30   references to the first client structure, in which
structure said second user has been given a certain level
of authority.

       20. The method as claimed in any one of claims 1 -
35   17, wherein said services are adapted to be accessed from
a telephone which is capable of transmitting DTMF (Dual
Tone Multi Frequency) tones.

21. The method as claimed in claim 20, wherein said
first client structure is accessible by said second user
by transmitting specific series of DTMF tones, in which
5   structure said second user has been given a certain level
of authority.

22. The method as claimed in any one of claims 1 –
21, wherein a number of companies which are clients
10 having a respective client structure constitute an
organisational entity, wherein one of the client
structures is superior to the others.

23. A system for providing users with access to
15 services, including:
a server providing an interface for enabling
different users to interact with the system;
a service control module for enabling different
service providers to interact with the system, said
20 service control module being operatively connected to
said server;
said server including a database with different
client structures, each client structure being associated
with a client and including at least one authority
25 profile with which a first user of the client structure
has the authority to give a second user of a second
client structure authority to access said first user's
client structure.

30 24. The system as claimed in claim 23, which further
includes a local gateway node associated to a client
structure, said local gateway node being arranged in
communication with locally distributed nodes operatively
connected to appliances of different types.

35

25. The system as claimed in claim 24, wherein a
locally distributed node which is operatively connected

24

to a local gateway node, is associated with the same
unique client structure as said local gateway node.

26. The system as claimed in any one of claims 23 –
25, wherein said interface is a graphical user interface,
such as a web page, including references to client
structures with which a user is associated.

27. The system as claimed in any one of claims 23 –
25, wherein said services are adapted to be accessed from
a telephone which is capable of transmitting DTMF (Dual
Tone Multi Frequency) tones, and wherein client
structures are accessible by an associated user by means
of specific series of DTMF tones.

28. The system as claimed in any one of claims 23 –
27, wherein said service providers interact with the
system by means of software modules installed for being
operatively connected to said service control module.

Fig. 1

one ⊨ many

Fig. 2

10

Client — 12

Users — 14

Services — 16

L.G.N. — 18

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Fig. 3

22

24

26

20

34a

34b

34c

28c

28a 28b

30

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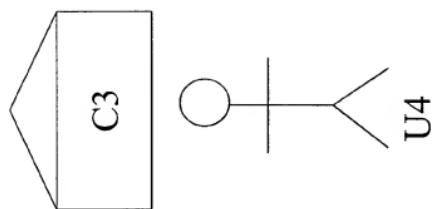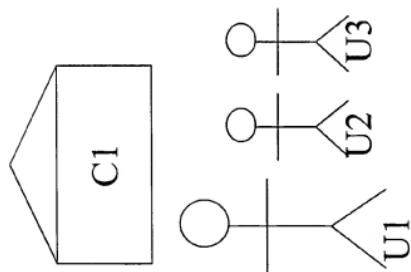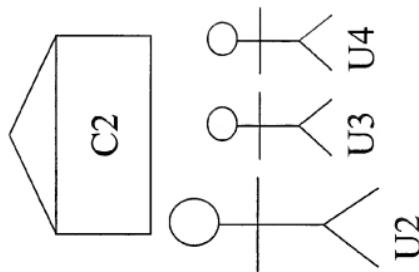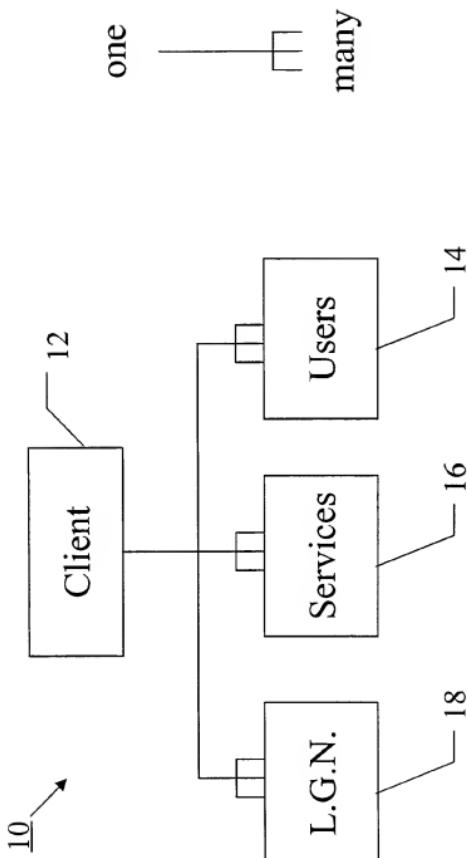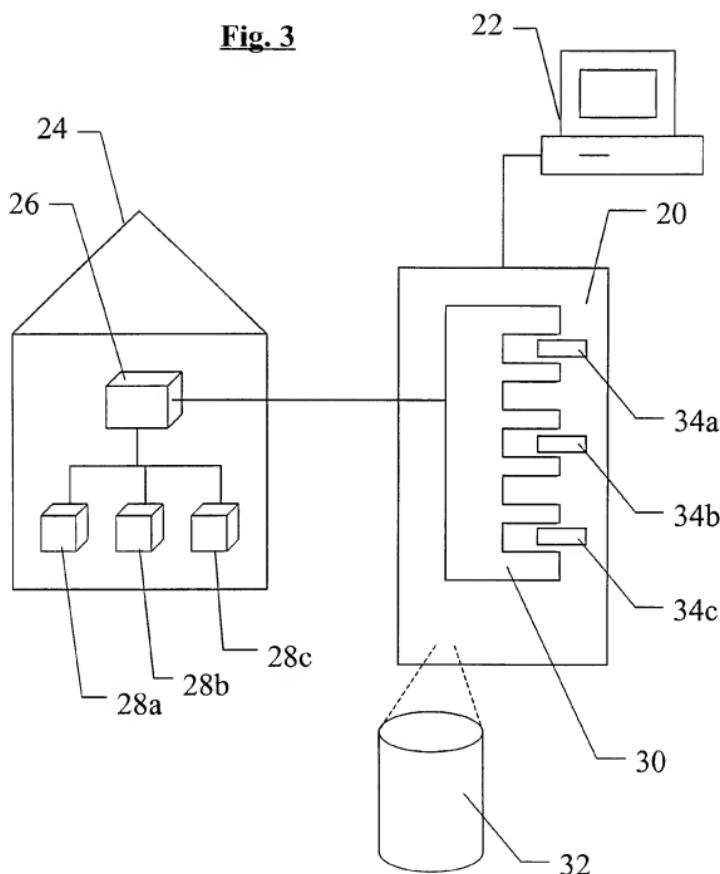
4/5

Fig. 4a
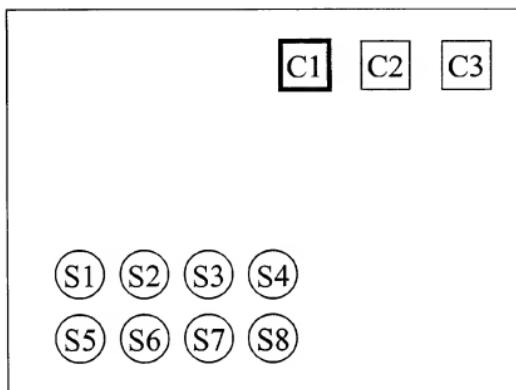
Fig. 4b
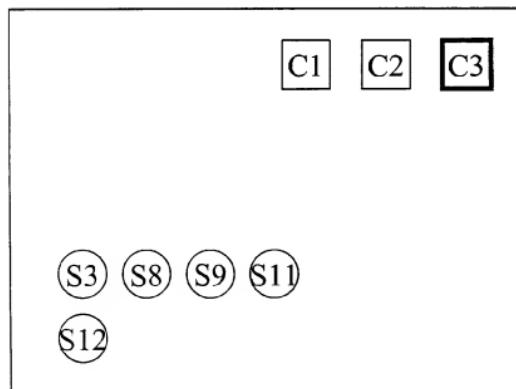
5/5

Table 1

Clients	
ID	Name
1	Smith
2	Company A
3	Company B
...	...
...	...

Table 2

User	
ID	Name
1	Smith
2	Jones
3	Cain
4	Bolton
...	...
...	...

Table 3

Services	
ID	Name
1	Temp. S
2	Temp. B
3	Temp. C
4	Alarm B
5	Stock-ex.
6	Traffic info.
...	...
...	...

Fig. 5

Table 4

Authority profiles		
ID	Name	Client-ID
1	Auth. 1	1
2	Auth. 1	2
3	Auth. 1	3
4	Auth. 2	3
5	Auth. 3	3
...	...	...
...	...	...

Table 5

Profile_User_relation	
Profile-ID	User-ID
3	1
3	2
4	3
1	1
2	4
...	...
...	...

Table 6

Profile_Service relation	
Profile-ID	Service-ID
1	1
1	5
2	2
3	4
3	6
4	4
...	...
...	...

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 01/00645

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 7/32, H04Q 7/38, G07F 7/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F, G07F, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4656342 A (UGON), 7 April 1987 (07.04.87), abstract --	1-28
A	US 4837422 A (DETHLOFF ET AL), 6 June 1989 (06.06.89), abstract --	1-28
A	WO 9610812 A1 (INTERNATIONAL BUSINESS MACHINES CORPORATION), 11 April 1996 (11.04.96), abstract -- --------	1-28

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search 8 August 2001	Date of mailing of the international search report 1 0 -08- 2001
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. + 46 8 666 02 86	Authorized officer Lars Ekeberg/js Telephone No. + 46 8 782 25 00

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